

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte BRIAN J. SCHWARTZ, ROBERT N. DAVIE, JR., BERNARD D.
VAILLETTE, JON C. HAMMETT, ALLAN B. PACKMAN, TIMOTHY L.
BROWN, and JAMES D. CAMPBELL, JR.

Appeal 2008-4545
Application 10/618,059
Technology Center 3700

Decided:¹ March 2, 2009

Before JENNIFER D. BAHR, MICHAEL W. O'NEILL, and
STEFAN STAICOVICI, *Administrative Patent Judges*.

STAICOVICI, *Administrative Patent Judge*.

DECISION ON APPEAL

¹ The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

STATEMENT OF THE CASE

Brian J. Schwartz et al. (Appellants) appeal under 35 U.S.C. § 134 from the Examiner's decision rejecting claims 1-8, 10-11, 13-16, and 18-26. Claims 9, 12, and 17 have been canceled. The Appellants' representative presented oral argument telephonically on February 12, 2009. We have jurisdiction over this appeal under 35 U.S.C. § 6 (2002).

THE INVENTION

The Appellants' invention is drawn towards a cooling nozzle for a machine tool using a rotating bit. Specification 1, ¶ 4. The cooling nozzle 20 includes a fluid inlet 62, three branch outlets 66, 68, and 70 located at 120° intervals, a plenum 72, and a circular array of outlet passageways 74, wherein each outlet passageway extends from the plenum to an outlet 80. Specification 3, ¶ 17 and figs. 2 and 4.

Claims 1 and 10 are representative of the claimed invention and read as follows:

1. An apparatus comprising:

a machine tool;

an elongate abrasive bit carried by the machine tool; and

a nozzle, the nozzle comprising a sintered body having:

at least one coolant inlet;

a plurality of coolant outlets, no gap in either circumferential direction between sequentially adjacent ones of the outlets being more than 72°;

internal surface portions defining one or more passageways between the at least one coolant inlet the and at least one coolant outlet; and

an aperture accommodating the bit.

10. An apparatus comprising:

a machine tool;

an elongate abrasive bit carried by the machine tool; and

a nozzle, the nozzle comprising:

a through-aperture accommodating the bit;

a coolant inlet;

a plurality of coolant outlets at more than one angular position about the through-aperture and oriented to discharge associated coolant outlet streams to impact obliquely toward a tip of the bit along a side of the bit, no gap in either circumferential direction between sequentially adjacent ones of the outlets being more than 72° there being no other coolant outlets in addition to the plurality of coolant outlets; and

internal surface portions defining one or more passageways between the coolant inlet the and the plurality of coolant outlets.

THE REJECTIONS

The Examiner relies upon the following as evidence of unpatentability:

Perkins	US 4,252,768	Feb. 24, 1981
Reitmeyer	US 6,471,573 B1	Oct. 29, 2002
Louis (as translated) ²	DE 202 16 396 U1	Feb. 6, 2003

The following rejections are before us for review:

1. claims 10, 11, and 13³ under 35 U.S.C. § 102(e) as anticipated by Louis;
2. claims 1-8, 10, 11, 13-16, and 18-26⁴ under 35 U.S.C. § 103(a) as unpatentable over Reitmeyer;
3. claims 10-11 and 13 under 35 U.S.C. § 103(a) as unpatentable over Reitmeyer in view of Louis;
4. claims 1-8, 14-16, and 18-26 under 35 U.S.C. § 103(a) as unpatentable over Reitmeyer in view of Perkins; and

² An English language translation obtained by the USPTO is appended to this opinion.

³ The Examiner has ostensibly inadvertently included claims 14 and 15, which depend from claim 1, not claim 10, in rejections (1) and (3), rather than rejections (4) and (5). In the interest of fairness to the Appellants, we treat claims 14 and 15 as included in rejections (4) and (5), and not rejections (1) and (3). In light of our disposition of rejections (4) and (5) below, this treatment does not appear to prejudice the Appellants.

⁴ On Page 3 of the Examiner's Answer (mailed October 18, 2007), the Examiner rejects claims 1-11, 13-16, and 18-26 as being unpatentable over Reitmeyer. The Examiner appears to have made a typographical error because claim 9 has been canceled. The same typographical error appears with respect to rejections (4) and (5). The correct grouping of the claims is shown above.

5. claims 1-8, 14-16, and 18-26 under 35 U.S.C. § 103(a) as unpatentable over Louis, either alone or in view of Perkins.

THE ISSUES

1. Have the Appellants shown that the Examiner erred in determining that the tool of Louis constitutes an “elongate bit”?
2. Have the Appellants shown that the Examiner erred in determining that a person of ordinary skill in the art would have been prompted to modify the adapter of Reitmeyer to include a sintered body?
3. Have the Appellants shown that the Examiner erred in determining that a person of ordinary skill in the art would have been prompted to modify the adapter of Reitmeyer to provide a plurality of outlets having an angular spacing between adjacent outlets of no more than 72°?
4. Have the Appellants shown that the Examiner erred in determining that a person of ordinary skill in the art would have been prompted to modify the adapter of Reitmeyer with the cooling rim (ring) of Louis such as to provide a plurality of outlets having an angular spacing between adjacent outlets of no more than 72°?
5. Have the Appellants shown that the Examiner erred in determining that a person of ordinary skill in the art would have been prompted to modify the adapter of Reitmeyer or the cooling rim (ring) of Louis with the sintered nozzle of Perkins?

SUMMARY OF DECISION

We AFFIRM-IN-PART.

FINDINGS OF FACT

The following enumerated findings of facts (FF) are supported by at least a preponderance of the evidence. *Ethicon, Inc. v. Quigg*, 849 F.2d 1422, 1427 (Fed. Cir. 1988) (explaining the general evidentiary standard for proceedings before the Office).

1. Louis discloses a cooling rim (ring) 24 arranged concentric to a grinding and polishing tool 14 for providing a cooling liquid (fluid) to the tool 14 and a glass work piece 10 being processed by the tool 14. Louis further teaches water as a cooling medium. Louis, Page 3 and 7 and figs. 1 and 2.
2. The tool 14 is a grinding or polishing disc 16 or a milling tool. Louis, Page 2 and 7.
3. The cooling rim (ring) 24 includes a plurality of holes (outlets) 26 distributed uniformly or irregularly along the perimeter located at a first acute angle 30 with the rotation axis 18. Louis, Page 3 and 7 and figs. 2 and 3. The cooling rim (ring) further includes a single inlet 48. Louis, Page 9 and fig. 8. The angular spacing between adjacent outlets is no more than 72°. Louis, figs. 11 and 12.
4. A customary and ordinary meaning of the term “bit” is “the cutting part of any tool.” *Webster's New World Dictionary* 145 (David B. Guralnik ed., 2nd Coll. Ed., Simon & Schuster, Inc. 1984).

5. Those skilled in the art at the time of the invention understood a face-milling tool to have a disc shape. *See, e.g.*, U.S. Patent No. 2,136,953 to Reaney, issued Nov. 15, 1938, figs. 1 and 2.
6. Reitmeyer discloses an adapter (cooling nozzle) mounted about a tool for supplying lubricating fluid (cooling fluid) to a region of a workpiece for reducing friction and heat resulting during an operation between the tool and the workpiece. Reitmeyer, col. 1, ll. 9-14.
7. The adapter 20 includes a mounting portion 21 that engages the housing 11 of the machine 10. Reitmeyer, col. 3, ll. 8-13, and fig. 3.
8. The mounting portion 21 includes a split 22 defining two adjacent ends that are fastened together using fastener 23. Reitmeyer, col. 3, ll. 26-28 and fig. 2.
9. The adapter 20 further includes a lubrication conduit portion 25 that is either secured with fasteners to or is integral with the mounting portion 21. Reitmeyer, col. 3, ll. 42-47 and fig. 2.
10. The lubrication conduit 25 includes an inlet port 26, a first outlet port 27, multiple internal passageways 28, 28a, and 28b, and additional outlet ports 29a and 29b. Reitmeyer, col. 3, ll. 48-56 and fig. 2.
11. Any desired number of outlet ports 27, 29a, and 29b may be located in any desired positions relative to the tool 12. Reitmeyer, col. 3, ll. 59-62.

12. A customary and ordinary meaning of sintering is “to cause to become a coherent mass by heating without melting.” *Merriam Webster's Collegiate Dictionary* 1096 (Tenth Ed. 1997).
13. Reitmeyer does not disclose the material used to make the adapter 21. Further, Reitmeyer does not disclose what type of fluid constitutes the “lubricating fluid.”
14. Neither Reitmeyer nor Louis discloses a “sintered body.”
15. Reitmeyer discloses that the lubrication conduit portion 25 is a sector having a center angle of about 90°. Further, the angle between the outlet ports 29a, 27, and 29b appears to be about 22.5°. Reitmeyer, fig. 2.
16. Perkins discloses a sintered ceramic nozzle 10, 20 having high temperature oxidation resistance, high hardness, and high abrasion and corrosion resistance for use with abrasive and/or corrosive materials. Perkins, Abstract and figs. 1 and 2.

PRINCIPLES OF LAW

Claim construction

When construing claim terminology in the United States Patent and Trademark Office, claims are to be given their broadest reasonable interpretation consistent with the specification, reading claim language in light of the specification as it would be interpreted by one of ordinary skill in the art. *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004).

Anticipation

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (1987).

It is not necessary that the reference teach what the subject application teaches, but only that the claim read on something disclosed in the reference, i.e., that all of the limitations in the claim be found in or fully met by the reference. *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 772 (Fed. Cir. 1983).

Obviousness

It is elementary that to support an obviousness rejection all words in a claim must be considered in judging the patentability of that claim against the prior art. *In re Wilson*, 424 F.2d 1382, 1385 (CCPA 1970).

“Section 103 forbids issuance of a patent when ‘the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.’” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, ___, 127 S. Ct. 1727, 1734 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, (3) the level of skill in the art, and (4) where in evidence, so-called secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966). *See also KSR*, 127 S. Ct. at 1734 (“While the

sequence of these questions might be reordered in any particular case, the [*Graham*] factors continue to define the inquiry that controls.”)

While there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness, “the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, ___, 127 S. Ct. 1727, 1741 (2007).

When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.

Id. at 1740. We must ask whether the improvement is more than the predictable use of prior art elements according to their established functions.

Id.

Rejections based on 35 U.S.C. § 103 must rest on a factual basis. In making such a rejection, the examiner has the initial duty of supplying the requisite factual basis and may not, because of doubts that the invention is patentable, resort to speculation, unfounded assumptions or hindsight reconstruction to supply deficiencies in the factual basis. *In re Warner*, 379 F.2d 1011, 1017 (CCPA 1967).

Inherency

Under principles of inherency, when a reference is silent about an asserted inherent characteristic, it must be clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. *Continental Can Co. v. Monsanto Co.*, 948 F.2d 1264, 1268 (Fed. Cir. 1991).

Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient. (Citations omitted.) If, however, the disclosure is sufficient to show that the natural result flowing from the operation as taught would result in the performance of the questioned function, it seems to be well settled that the disclosure should be regarded as sufficient.

In re Oelrich, 666 F.2d 578, 581 (CCPA 1981) (quoting *Hansgird v. Kemmer*, 102 F.2d 212, 214 (CCPA 1939)).

OPINION⁵

Issue (1)

The rejection of claims 10, 11, and 13 as anticipated by Louis

The Appellants argue that the tool of Louis does not constitute an “elongate bit” (App. Br. 6). In response, the Examiner points to the tool 14, 16 shown in Figure 10 of Louis and takes the position that the tool of Louis

⁵ We refer herein to the Appeal Brief (“App. Br.”), filed August 16, 2007, the Reply Brief (“Reply Br.”), filed December 20, 2007, the Final Rejection (“Final Rejection”), mailed November 29, 2006, and the Examiner’s Answer (“Answer”), mailed October 18, 2007.

satisfies the limitation of an “elongated bit” because it includes an “elongated” shaft. Furthermore, according to the Examiner, since the shaft is inserted into the chuck of a machine tool, the tool of Louis satisfies the limitation of a “bit” (Answer 6). Finally, the Examiner takes the position that Louis also discloses a “milling tool” (Answer 6) which is “inherently elongated” (Final Rejection 7). The Examiner points to Figure 2 of US Patent No. 6, 739, 959 (issued to Bodenmiller on May 25, 2004) to show that “a milling tool as known in the art is generally defined by an ‘elongate bit’” (Answer 6-7). In response, the Appellants argue that a “milling tool is not inherently elongated” (App. Br. 6) and that the use of newly cited prior art, U.S. Patent No. 6, 739, 959, constitutes a new ground of rejection (Reply Br. 4-5).

The tool 14 of Louis is a grinding or polishing disc 16 or a milling tool (FF 2). The Appellants’ Specification does not expressly define the term “bit” or otherwise indicate that these terms are used in a manner other than their ordinary and customary meaning. Accordingly, we construe the term “bit” in accordance with its ordinary and customary meaning. As found above, a customary and ordinary meaning of the term “bit” is “the cutting part of any tool” (FF 4). In the tool 14 of Louis, the “cutting edge” of the tool is formed by the grinding or polishing disc 16 and not the shaft portion, as the Examiner contends. As such, we are in agreement with the Appellants that a person of ordinary skill in the art would not characterize the tool 14 of Louis as an “elongate bit.” Therefore, the grinding or polishing disc 16 of the tool 14 of Louis does not satisfy the limitation of an “elongate bit,” as required by claim 10.

As noted above, Louis also discloses the tool 14 to be a milling tool (FF 2). Although the Examiner provides evidence of a “milling tool” that is “elongated,” we disagree with the Examiner’s assertion that “a milling tool as known in the art is generally defined by an ‘elongate bit’” (Answer 6-7), that is, a milling tool is “inherently elongated” (Final Rejection 7). Not all milling tools are necessarily “elongated.” For example, as noted above, when face milling, the tool is disc-shaped and thus cannot be characterized as “elongated” (FF 5), as the Examiner asserts.

In conclusion, we find that Louis does not disclose an “elongate bit,” as required by claim 10. Therefore, Louis does not show all the elements of claim 10. Accordingly, the rejection of claims 10, 11, and 13 under 35 U.S.C. § 102(e) as anticipated by Louis, cannot be sustained.

Issue (2)

*The rejection of claims 1-8, 14-16, and 18-26 as unpatentable over
Reitmeyer*

Each of independent claims 1, 16, and 20 recites an apparatus having a nozzle comprising a “sintered body.” The Examiner contends that the limitation of a “sintered body” is drawn to the process of forming the nozzle, and hence, “is not germane to the issue of patentability of the [nozzle]” (Answer 4). Furthermore, the Examiner takes the position that it is well known in the art that sintering makes a device “last longer and/or protect it against corrosion...and such modification would have been well within the knowledge of one of ordinary skill in the art” (Answer 4).

The Appellants argue that the Examiner erred in rejecting these claims because,

There is no indication that one of ordinary skill in the art would provide Reitmeyer with a sintered body (and none that Reitmeyer's structure would be sinterable), let alone that the sintered body would either make [the adapter of] Reitmeyer last longer or protect it against corrosion in the Reitmeyer use.

App. Br. 9 (underlining in original).

We find the Examiner's purported reason for modifying the adapter (cooling nozzle) of Reitmeyer to make it as a sintered body in order to "last longer and/or protect it against corrosion" deficient in this case because the Examiner has not explained why a person of ordinary skill in the art would have considered a sintered body to be suitable for the adapter of Reitmeyer.

First, we note that the Appellants' Specification does not expressly define the term "sintering" or otherwise indicate that this term is used in a manner other than their ordinary and customary meaning. Accordingly, we construe the term "sintering" in accordance with its ordinary and customary meaning. As shown above, a customary and ordinary meaning of the term "sintering" is "to cause to become a coherent mass by heating without melting" (FF 12). As such, although we agree with the Examiner that "sintering" is a process of forming the nozzle, the claims recite a "sintered body." Since in a "sintered body" the material is not melted we find that a person of ordinary skill in the art would readily appreciate that a "sintered body" has a separate and distinct structure than a body that includes melting.

Second, the Examiner has not provided any factual basis to show that modifying the adapter (cooling nozzle) of Reitmeyer to include a "sintered body" will make the adapter of Reitmeyer "last longer and/or protect it against corrosion" or that a person of ordinary skill in the art would

understand this to be the case. Although a “sintered body” has a separate and distinct structure, the corrosion strength of an object is the result of balancing a variety of factors such as, the corrosion strength of the material used to make the object (*i.e.*, metallic, ceramic, plastic), the corrosive properties of the environment in which the object is used (*i.e.*, water, salt content, abrasive particles), and the forces acting on the object during its use (*i.e.*, pressure, temperature, mechanical stress). Without taking these factors into consideration, we find that it is not clear that a sintered adapter would “protect it against corrosion,” as proposed by the Examiner. Reitmeyer does not disclose the material used to make the adapter 21. Further, Reitmeyer does not disclose what type of fluid constitutes the “lubricating fluid” (FF 13). Since neither the material of the adapter nor the fluid flowing through the adapter of Reitmeyer are disclosed, we find that a person of ordinary skill in the art would not reasonably appreciate that a sintered adapter would “protect it against corrosion,” and hence, modify the adapter of Reitmeyer with a sintered body, as proposed by the Examiner. Accordingly, the modification proposed by the Examiner of modifying the adapter (cooling nozzle) of Reitmeyer to include a “sintered body” would not have been obvious to the person of ordinary skill in the art.

For the above stated reasons, the Examiner has failed to set forth a *prima facie* case of obviousness of the subject matter of independent claims 1, 16, and 20. We will not sustain the rejection of claims 1, 16, and 20 or their dependent claims 2-8, 14, 15, 18-19, and 21-26. *See In re Fine*, 837 F.2d 1071, 1076 (Fed. Cir. 1988) (If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim dependent therefrom is nonobvious).

Issue (3)

The rejection of claims 10, 11, and 13 as unpatentable over Reitmeyer

The Appellants argue that Reitmeyer does not disclose a plurality of outlets having an angular spacing between adjacent outlets of no more than 72° (App. Br. 7). Specifically, the Appellants argue that the angular spacing between outlet ports 29a and 29b of Reitmeyer is more than 270° (App. Br. 24). In response, the Examiner takes the position that because

Reitmeyer discloses...that “any desired number of such outlet ports 27, 29a, and 29b may be located in any desired positions relative to the tool 12”. It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the invention of Reitmeyer with more outlet ports (e.g., 5, spaced substantially around the adapter) with spacing of no more than 72 degrees, in adapting the device for a particular application.”

Answer 4.

Finally, the Appellants appear to argue that even if a plurality of outlet ports, *i.e.*, 10 ports, are provided to the adapter of Reitmeyer, according to the teachings of Reitmeyer, the outlet ports would merely be spaced closer together on the same sector and the gap between adjacent outlets would be more than 72° (App. Br. 9). In other words, it appears that the Appellants are arguing that even if multiple outlet ports are provided to the the adapter of Reitmeyer, as the Examiner proposes, that does not necessarily result in an angular spacing between adjacent outlets of no more than 72°, as required by claim 10.

Reitmeyer specifically teaches that any desired number of outlet ports 27, 29a, and 29b may be located in any desired positions relative to the tool 12 (FF 11). In view of the teachings of Reitmeyer, we find that a person of ordinary skill in the art would readily appreciate that location of any desired number of outlet ports located in any desired position relative to the tool encompasses providing more than three nozzles over a greater portion of the adaptor than that occupied by the particular conduit portion 25 illustrated in fig. 2. In order to accommodate such an array of nozzles in the adapter of Reitmeyer, a person of ordinary skill in the art would understand that either a larger conduit portion 25 is required or a plurality of lubrication conduit portions 25 are required. Reitmeyer discloses that the lubrication conduit portion 25 is a sector having a center angle of about 90° and the angle between the outlet ports 29a, 27, and 29b appears to be about 22.5° (FF 15). As such, we find that Reitmeyer teaches that there are a finite number of alternatives for the positioning of a plurality of lubrication conduit portions 25. A person of ordinary skill in the art would readily appreciate that because each lubrication conduit portion 25 has a center angle of about 90° , only four lubrication conduit portions 25 can be mounted to the mounting portion 21 in the adapter of Reitmeyer, hence forming a full 360° coverage (as required by claim 13). In such a case the angular spacing between adjacent outlets is about 45° , which is no more than 72° , as required by claim 10. Moreover, the Appellants' argument that a "comprehensive reengineering would be required" in order to for the plenum 28 to feed all the outlets (App. Br. 8) is unpersuasive because a person of ordinary skill in the art would readily appreciate that in order to feed four similar lubrication conduit portions 25, merely four similar inlet ports 28 would be provided.

When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense. In that instance the fact that a combination was obvious to try might show that it was obvious under § 103.

KSR at 1742.

Accordingly, the selection of the number of lubrication conduit portions, that is, four lubrication conduit portions, appears to be the product not of innovation but of ordinary skill and common sense. The Appellants have not shown that providing four lubrication conduit portions to the mounting portion in the adapter of Reitmeyer would be uniquely challenging or beyond the technical grasp of a person of ordinary skill in the art. In conclusion, the Appellants' arguments do not persuade us the Examiner erred in rejecting claims 10, 11, and 13.

Accordingly, the rejection of claims 10, 11, and 13 under 35 U.S.C. § 103(a) as unpatentable over Reitmeyer is sustained.

Issue (4)

The rejection of claims 10, 11, and 13 as unpatentable over Reitmeyer in view of Louis

The Appellants argue the rejection under 35 U.S.C. § 103(a) of claims 10, 11, and 13 together as a group. Therefore, in accordance with 37 C.F.R. § 41.37(c)(1)(vii) (2007), we have selected claim 10 as the representative

claim to decide the appeal, with claims 11 and 13 standing or falling with claim 10.

The Appellants argue that the Examiner's conclusion of obviousness is based on improper hindsight (App. Br. 12). However, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. *In re McLaughlin*, 443 F.2d 1392, 1395 (CCPA 1971).

In this case, Reitmeyer specifically teaches that any desired number of outlet ports 27, 29a, and 29b may be located in any desired positions relative to the tool 12 (FF 11). As shown above, a person of ordinary skill in the art would readily appreciate that location of any desired number of outlet ports located in any desired position relative to the tool encompasses providing more than three nozzles over a greater portion of the adaptor than that occupied by the particular conduit portion 25 illustrated in fig. 2. In order to accommodate such an array of nozzles in the adapter of Reitmeyer, a person of ordinary skill in the art would understand that either a larger conduit portion 25 is required or a plurality of lubrication conduit portions 25 are required. Louis discloses a cooling rim (ring) arranged concentric to a tool for providing a cooling liquid (fluid) to the tool and the work piece being processed (FF1). Furthermore, Louis discloses that the cooling rim (ring) includes a single inlet and a plurality of outlets distributed uniformly or irregularly along its perimeter having an angular spacing between adjacent outlets of no more than 72° (FF 3). Hence, in view of the teachings of

Reitmeyer suggesting a plurality of outlets and the explicit teachings of Louis of a cooling rim (ring) having a plurality of outlets distributed uniformly along its perimeter, we agree with the Examiner that “[i]t would have been obvious to one of ordinary skill in the art, at the time of the invention was made, to modify the invention of Reitmeyer with more outlet ports as taught by DE ‘396 [(Louis)]” (Answer 5) because the modification is no more than “the simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for the improvement.” *KSR* at 1740. Therefore, the substitution appears to be the product not of innovation but of ordinary skill and common sense.

Further, the Appellants argue that modifying the adapter of Reitmeyer to provide multiple ports as taught by Louis “would greatly increase Reitmeyer’s already high complexity and manufacturing cost” (App. Br. 12). We find the Appellants’ argument unpersuasive for at least two reasons. First, the Appellants have not provided any objective evidence that the Examiner’s proposed modification would increase the manufacturing cost. The arguments of counsel cannot take the place of evidence in the record. *In re Schulze*, 346 F.2d 600, 602 (CCPA 1965). Second, the modified adapter of Reitmeyer in view of Louis includes a single unitary ring having a single inlet and a plurality of outlets, whereas the unmodified adapter of Reitmeyer includes multiple lubrication conduit sections, multiple inlets, and multiple outlets. Hence, in contrast to the Appellants’ position, we find that the modified adapter of Reitmeyer in view of Louis is actually a less complex device than the adapter of Reitmeyer because of the reduced number of inlets and its integral and unitary construction.

Finally, the Appellants appear to argue that because the adapter of Reitmeyer has a different construction than the cooling rim (ring) of Louis, the teachings of Reitmeyer and Louis teach away from the combination (App. Br. 12). However, simply that there are differences between two references is insufficient to establish that such references "teach away" from any combination thereof. *See In re Beattie*, 974 F.2d 1309, 1312-13 (Fed. Cir. 1992).

For the foregoing reasons, the Appellants' arguments do not persuade us the Examiner erred in rejecting claim 10, and claims 11 and 13 standing or falling with claim 10. Accordingly, the rejection of claim 10, and claims 11 and 13 standing or falling with claim 10, is sustained.

Issue (5)

The rejection of claims 1-8, 16, and 18-26 as unpatentable over Reitmeyer in view of Perkins

Each of independent claims 1, 16, and 20 recites an apparatus having a nozzle comprising a "sintered body." As shown above, neither Reitmeyer nor Louis discloses a "sintered body" (FF 14). Perkins discloses a sintered ceramic nozzle 10, 20 having high temperature oxidation resistance, high hardness, and high abrasion and corrosion resistance for use with abrasive and/or corrosive materials (FF 16). The Appellants argue that the Examiner has not "properly cited motivation as to why a person of ordinary skill in the art would so modify Reitmeyer or otherwise attempt sintered material use in a coolant nozzle" (App. Br. 14) (underlining in original). In response, the Examiner asserts that,

The teaching from Perkins et al to one of ordinary skill in the art would be that if a nozzle as

disclosed by Reitmeyer [is] utilized in [a] highly corrosive/abrasive environment were subject to corrosion/abrasion itself, the problem may be cured using sintered ceramic body.

Answer 10-11. Underlining added.

We find the Examiner's purported reason for modifying the adapter (cooling nozzle) of Reitmeyer to include a sintered body "if a nozzle as disclosed by Reitmeyer [is] utilized in [a] highly corrosive/abrasive environment," to be speculative. We could not find any teachings in Reitmeyer and the Examiner has not pointed to any teachings in Reitmeyer that would suggest to a person of ordinary skill in the art that the adapter (cooling nozzle) of Reitmeyer is utilized in a highly corrosive or abrasive environment. As shown above, Reitmeyer does not disclose what type of fluid constitutes the "lubricating fluid" (FF 13). Hence, Reitmeyer does not disclose that the adapter (cooling nozzle) is used in a highly corrosive or abrasive environment, as the Examiner appears to suggest. Moreover, we note that the use of the term "lubricating" to describe the fluid flowing through the adapter of Reitmeyer would reasonably suggest to a person of ordinary skill that the fluid is not abrasive. As such, the Examiner's contention is mere speculation based on an unfounded assumption that the "lubricating fluid" is highly corrosive or abrasive. Hence, we do not find that the Examiner has established a factual basis to show that modifying the adapter (cooling nozzle) of Reitmeyer to include a "sintered body" as taught by Perkins would have been obvious to a person of ordinary skill in the art. For the above stated reasons, the Examiner has failed to set forth a prima

facie case of obviousness of the subject matter of independent claims 1, 16, and 20.

In conclusion, we will not sustain the rejection of claims 1, 16, and 20 or their dependent claims 2-8, 14, 15, 18-19, and 21-26 under 35 U.S.C. § 103(a) as unpatentable over Reitmeyer in view of Perkins. *See In re Fine*, 837 F.2d 1071, 1076 (Fed. Cir. 1988) (If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim dependent therefrom is nonobvious).

The rejection of claims 1-8, 16, and 18-26 as unpatentable over Louis, alone, or in view of Perkins

With respect to the teachings of Louis and Perkins the Examiner merely states that,

DE '396 modified with respect to choice of material as indicated above, or in view of Perkins et al. further modified in light of combination with known tools, depending on the intended use, as indicated above meets all the limitations.

Answer 6.

Louis discloses a cooling rim (ring) 24 arranged concentric to a grinding and polishing tool 14 for providing a cooling liquid (fluid), such as water, to the tool 14 and a glass work piece 10 being processed by the tool 14 (FF 1). Perkins discloses a sintered ceramic nozzle 10, 20 having high temperature oxidation resistance, high hardness, and high abrasion and corrosion resistance for use with abrasive and/or corrosive materials (FF 16). We could not find any teachings in Louis and the Examiner has not pointed to any teachings in Louis that would suggest to a person of ordinary skill in

the art that the cooling rim (ring) 24 of Louis is utilized in a highly corrosive or abrasive environment. Louis specifically discloses water as a cooling fluid (FF 1). A person of ordinary skill in the art would readily appreciate that the cooling water of Louis cannot constitute a corrosive or abrasive fluid because it would damage the tool 14. Hence, we do not find that the Examiner's statement establishes a factual basis to show that modifying the cooling rim (ring) 24 of Louis to include a "sintered body" as taught by Perkins would have been obvious to a person of ordinary skill in the art. For the above stated reasons, the Examiner has failed to set forth a prima facie case of obviousness of the subject matter of independent claims 1, 16, and 20.

In conclusion, we will not sustain the rejection of claims 1, 16, and 20 or their dependent claims 2-8, 18-19, and 21-26 under 35 U.S.C. § 103(a) as unpatentable over Louis, either alone or in view of Perkins.

CONCLUSIONS

1. The Appellants demonstrated that the Examiner erred in determining that the tool of Louis constitutes an "elongate bit."
2. The Appellants demonstrated that the Examiner erred in determining that a person of ordinary skill in the art would have been prompted to modify the adapter of Reitmeyer with a sintered body.
3. The Appellants failed to demonstrate that the Examiner erred in determining that a person of ordinary skill in the art would have been prompted to modify the adapter of Reitmeyer to provide a

plurality of outlets having an angular spacing between adjacent outlets of no more than 72° .

4. The Appellants failed to demonstrate that the Examiner erred in determining that a person of ordinary skill in the art would have been prompted to modify the adapter of Reitmeyer with the cooling rim (ring) of Louis such as to provide a plurality of outlets having an angular spacing between adjacent outlets of no more than 72° .
5. The Appellants demonstrated that the Examiner erred in determining that a person of ordinary skill in the art would have been prompted to modify the adapter of Reitmeyer or the cooling rim (ring) of Louis with the sintered nozzle of Perkins.

SUMMARY

The decision of the Examiner to reject claims 10, 11, and 13 under 35 U.S.C. § 102(e) as anticipated by Louis is reversed.

The decision of the Examiner to reject claims 1-8, 10, 11, 13-16, and 18-26 under 35 U.S.C. § 103(a) as unpatentable over Reitmeyer is reversed as to claims 1-8, 14-16, and 18-26 and affirmed as to claims 10, 11, and 13.

The decision of the Examiner to reject claims 10-11 and 13 under 35 U.S.C. § 103(a) as unpatentable over Reitmeyer in view of Louis is affirmed.

The decision of the Examiner to reject claims 1-8, 14-16, and 18-26 under 35 U.S.C. § 103(a) as unpatentable over Reitmeyer in view of Perkins is reversed.

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The decision of the Examiner to reject claims 1-8, 16, and 18-26 under 35 U.S.C. § 103(a) as unpatentable over Louis, either alone or in view of Perkins, is reversed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv) (2007).

AFFIRMED-IN-PART

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Attachments: English translation of Louis reference (DE 202 16 396 U1)